

## WEST Search History

DATE: Sunday, July 09, 2006

<u>Hide?</u>	<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>
<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES; OP=ADJ</i>			
<input type="checkbox"/>	L15	L14	12
<input type="checkbox"/>	L14	L13 and (carbon monoxide or co) with conversion	12
<input type="checkbox"/>	L13	l5 and channels with fischer tropsch	18
<input type="checkbox"/>	L12	L11 and space velocity	28
<input type="checkbox"/>	L11	L10 not l9	37
<input type="checkbox"/>	L10	L6 and overall near4 conversion	40
<input type="checkbox"/>	L9	L7 and overall near4 conversion	3
<input type="checkbox"/>	L8	L7 and overal near4 conversion	0
<input type="checkbox"/>	L7	L6 and gas flow velocity	6
<input type="checkbox"/>	L6	L5 and channel\$1	369
<input type="checkbox"/>	L5	fischer tropsch and two near3 stage\$1	953
<i>DB=PGPB,USPT; THES=ASSIGNEE; PLUR=YES; OP=ADJ</i>			
<input type="checkbox"/>	L4	fischer tropsch and two near3 stage\$1	860
<input type="checkbox"/>	L3	L2 and carbon monoxide with conversion	1
<input type="checkbox"/>	L2	us 20020048541	1
<input type="checkbox"/>	L1	us 2002048541	0

END OF SEARCH HISTORY

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FILE 'HOME' ENTERED AT 18:52:27 ON 09.JUL.2006

=> file caplus  
COST IN U.S. DOLLARS  
  
FULL ESTIMATED COST

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FILE 'CAPLUS' ENTERED AT 18:52:44 ON 09 JUL 2006  
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FILE COVERS 1907 - 9 Jul 2006 VOL 145 ISS 3  
FILE LAST UPDATED: 7 Jul 2006 (20060707/ED)

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=> s de 19654361/pn  
L1 1 DE 19654361/PN  
(DE19654361/PN)

=> d 11 iall

L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 1998:430225 CAPLUS  
DOCUMENT NUMBER: 129:111347  
ENTRY DATE: Entered STN: 13 Jul 1998  
TITLE: Stacked reactor for methanol-water steam reforming for hydrogen production  
INVENTOR(S): Brenner, Martin; Pfender, Conrad  
PATENT ASSIGNEE(S): Behr G.m.b.H. und Co., Germany  
SOURCE: Ger. Offen., 6 pp.  
CODEN: GWXXBX  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
INT. PATENT CLASSIF.:  
MAIN: C25D011-02  
SECONDARY: F28D009-02; F28F007-00; B01J008-00  
ADDITIONAL: B32B003-20  
CLASSIFICATION: 52-1 (Electrochemical, Radiational, and Thermal Energy Technology)  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19654361	A1	19980625	DE 1996-19654361	19961224 <--
PRIORITY APPLN. INFO.:			DE 1996-19654361	19961224

PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 19654361	ICM	C25D011-02
	ICS	F28D009-02; F28F007-00; B01J008-00
	ICA	B32B003-20
	IPCI	C25D0011-02 [ICM,6]; F28D0009-02 [ICS,6]; F28D0009-00 [ICS,6,C*]; F28F0007-00 [ICS,6]; B01J0008-00 [ICS,6];

IPCR B32B0003-20 [ICA,6]; B32B0003-18 [ICA,6,C\*]  
B01J0012-00 [I,A]; B01J0012-00 [I,C\*]; B01J0019-00  
[I,A]; B01J0019-00 [I,C\*]; B01J0019-24 [I,A];  
B01J0019-24 [I,C\*]; C01B0003-00 [I,C\*]; C01B0003-32  
[I,A]; C01B0003-38 [I,A]; F28D0011-00 [I,C\*];  
F28D0011-02 [I,A]; F28F0013-00 [I,C\*]; F28F0013-12  
[I,A]; H01M0008-06 [I,A]; H01M0008-06 [I,C\*]  
ECLA B01J012/00P; B01J019/00R; B01J019/24R4; C01B003/32B;  
C01B003/38B; F28D011/02; F28F013/12B; H01M008/06B2C

ABSTRACT:

The stacked reactor comprises a multiplicity of plate or tube elements with openings arranged so that, when stacked, the open areas form conduits which are not interconnected and which flow vertically. One set of conduits functions as the reactors and the other set of conduits functions as a heat transfer fluid passage. The elements have a microporous anodically oxidized film on its surface which is then acts as a substrate for the catalytically active material.

SUPPL. TERM: stacked reactor steam reforming  
INDEX TERM: Steam reforming  
(stacked reactor for methanol-water steam reforming for hydrogen production)  
INDEX TERM: Reforming apparatus  
(stacked; stacked reactor for methanol-water steam reforming for hydrogen production)  
INDEX TERM: 1333-74-0P, Hydrogen, preparation  
ROLE: IMF (Industrial manufacture); PREP (Preparation)  
(stacked reactor for methanol-water steam reforming for hydrogen production)  
INDEX TERM: 67-56-1, Methanol, reactions  
ROLE: RCT (Reactant); RACT (Reactant or reagent)  
(stacked reactor for methanol-water steam reforming for hydrogen production)  
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD.  
REFERENCE(S): (1) Anon; DE 3601073 A1  
(2) Anon; DE 8511092 U1  
(3) Anon; WO 8909186 A1 CAPLUS  
(4) Anon; DE PS158789  
(5) Honicke, D; Aluminium 1989, V65, PS1154

=> s de 2824755/pn  
L2 0 DE 2824755/PN  
(DE2824755/PN)

=> s fr 2824755/pn  
L3 1 FR 2824755/PN  
(FR2824755/PN)

=> d 13 iall

L3 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 2003:102739 CAPLUS  
DOCUMENT NUMBER: 138:109388  
ENTRY DATE: Entered STN: 11 Feb 2003  
TITLE: Plate reactor and its operation in an exothermic catalytic process  
INVENTOR(S): Czernichowski, Eczyslovo; Czernichowski, Albin  
PATENT ASSIGNEE(S): Etudes Chimiques Et Physiques, Fr.  
SOURCE: Fr. Demande, 55 pp.  
CODEN: FRXXBL  
DOCUMENT TYPE: Patent  
LANGUAGE: French

INT. PATENT CLASSIF.:  
MAIN: B01J008-02  
SECONDARY: B01J008-06; B01J019-24; B01J038-00; C07C001-04  
CLASSIFICATION: 51-6 (Fossil Fuels, Derivatives, and Related Products)  
Section cross-reference(s): 47, 67  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2824755	A1	20021122	FR 2001-6622	20010515 <--
FR 2824755	B1	20030815		

PRIORITY APPLN. INFO.: FR 2001-6622 20010515

PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
FR 2824755	ICM	B01J008-02
	ICS	B01J008-06; B01J019-24; B01J038-00; C07C001-04
	IPCI	B01J0008-02 [ICM,7]; B01J0008-06 [ICS,7]; B01J0019-24 [ICS,7]; B01J0038-00 [ICS,7]; C07C0001-04 [ICS,7]; C07C0001-00 [ICS,7,C*]
	IPCR	B01J0019-24 [I,A]; B01J0019-24 [I,C*]; C07C0001-00 [I,C*]; C07C0001-04 [I,A]; C10G0002-00 [I,A]; C10G0002-00 [I,C*]; F28D0009-00 [I,A]; F28D0009-00 [I,C*]; F28F0013-00 [I,C*]; F28F0013-12 [I,A]
	ECLA	B01J019/24R4; C07C001/04B2; C10G002/00B2F2; F28D009/00L; F28F013/12

ABSTRACT:

Modular reactors for catalytic Fischer-Tropsch synthesis of hydrocarbons from syngas have cells containing catalyst alternating with cells for removing the reaction heat, a means for contacting the cells, and a means for controlling the flow of the reactants and products.

SUPPL. TERM: Fischer Tropsch catalytic hydrocarbon manuf multiple cell reactor; syngas conversion hydrocarbon manuf multiple cell reactor

INDEX TERM: Reactors  
(catalytic; multiple cell reactors for catalytic Fischer-Tropsch synthesis of hydrocarbons from syngas)

INDEX TERM: Fischer-Tropsch reaction  
Synthesis gas  
(multiple cell reactors for catalytic Fischer-Tropsch synthesis of hydrocarbons from syngas)

INDEX TERM: Hydrocarbons, preparation  
ROLE: IMF (Industrial manufacture); PREP (Preparation)  
(multiple cell reactors for catalytic Fischer-Tropsch synthesis of hydrocarbons from syngas)

=> s fischer tropsch  
23764 FISCHER  
17 FISCHERS  
23776 FISCHER  
(FISCHER OR FISCHERS)  
8092 TROPSCH  
L4 7987 FISCHER TROPSCH  
(FISCHER (W) TROPSCH)

=> s 14 and channels  
154016 CHANNELS  
L5 37 L4 AND CHANNELS

=> s 15 and carbon monoxide (s) conversion  
1202153 CARBON

26190 CARBONS  
 1211529 CARBON  
     (CARBON OR CARBONS)  
 175618 MONOXIDE  
     996 MONOXIDES  
 176142 MONOXIDE  
     (MONOXIDE OR MONOXIDES)  
 148694 CARBON MONOXIDE  
     (CARBON (W) MONOXIDE)  
 463018 CONVERSION  
     21855 CONVERSIONS  
 475814 CONVERSION  
     (CONVERSION OR CONVERSIONS)  
 3391 CARBON MONOXIDE (S) CONVERSION  
 L6     4 L5 AND CARBON MONOXIDE (S) CONVERSION

=> d 16 ibib ab 1-4

L6 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2005:1334972 CAPLUS  
 DOCUMENT NUMBER: 144:53386  
 TITLE: Fischer-Tropsch catalytic plant  
       and process for the manufacture of hydrocarbons from  
       synthesis gas  
 INVENTOR(S): Bowe, Michael Joseph  
 PATENT ASSIGNEE(S): Gtl Microsystems AG, Switz.  
 SOURCE: U.S. Pat. Appl. Publ., 5 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005282918	A1	20051222	US 2005-140884	20050601
US 7067561	B2	20060627		
WO 2005123883	A1	20051229	WO 2005-GB50070	20050524
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

PRIORITY APPLN. INFO.: GB 2004-13400 A 20040616  
 AB Fischer-Tropsch synthesis is performed on a CO-H<sub>2</sub> feed  
       gas using a plurality of compact catalytic reactor modules each defining  
       catalytic reaction channels and coolant channels, in  
       two successive stages, with the same number of reactor modules for each  
       stage. The gas flow velocity in the first stage is sufficiently high that  
       ≤75% of the CO undergoes conversion. The gases are cooled between  
       successive stages so as to remove water vapor, and the pressure is reduced  
       before they are subjected to the second stage. In addition, the reaction  
       temperature for the second stage is lower than for the first stage, such that  
       ≤75% of the remaining carbon monoxide undergoes  
       conversion during the second stage, too. The deleterious effect  
       of water vapor on the catalyst is hence suppressed, while the overall  
       capacity of the plant can be adjusted by closing off modules in each stage

while keeping the nos. equal. A process flow diagram is presented.  
 REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2004:493817 CAPLUS  
 DOCUMENT NUMBER: 141:25974  
 TITLE: Two-stage Fischer-Tropsch reactor  
 with interstage cooling for reduced water-induced  
 catalyst oxidation and deactivation  
 INVENTOR(S): Bowe, Michael Joseph; Lee-Tuffnell, Clive Derek  
 PATENT ASSIGNEE(S): GTL Microsystems A.-G., Switz.  
 SOURCE: PCT Int. Appl., 19 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 3  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004050799	A1	20040617	WO 2003-GB5198	20031127
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
WO 2003048035	A1	20030612	WO 2002-GB5443	20021202
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2505614	AA	20040617	CA 2003-2505614	20031127
AU 2003285558	A1	20040623	AU 2003-285558	20031127
EP 1567616	A1	20050831	EP 2003-778556	20031127
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
BR 2003016828	A	20051018	BR 2003-16828	20031127
JP 2006508234	T2	20060309	JP 2004-570700	20031127
US 2006041029	A1	20060223	US 2005-536726	20050527
NO 2005003244	A	20050901	NO 2005-3244	20050701
PRIORITY APPLN. INFO.:			WO 2002-GB5443	A 20021202
			GB 2003-14790	A 20030625
			GB 2001-29054	A 20011205
			WO 2003-GB5198	W 20031127

AB Fischer-Tropsch synthesis is carried out in two stages with a compact catalytic reactor unit with defined gas-flow channels containing a gas-permeable catalyst structure, in which the channels extend between headers that sep. the reaction stages. The gas flow velocity through the first set of channels are sufficiently high such that  $\leq 70\%$  of the carbon monoxide undergoes conversion. After reaction in the first set of channels, the product gases are cooled in the

header between the two stages, which condenses the product water vapor. After cooling, the remaining gases undergo reaction at a sufficiently high gas flow velocity such that  $\leq 70\%$  of the remaining carbon monoxide undergoes conversion. This decreases the partial pressure of water vapor and thus suppresses oxidation (and deactivation) of the catalyst.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2002:138900 CAPLUS  
 DOCUMENT NUMBER: 136:185874  
 TITLE: Reactor for carrying out intense thermal reactions  
 INVENTOR(S): Schoedel, Nicole; Sotzek, Manfred; Suessmann, Wolfgang; Walzl, Roland  
 PATENT ASSIGNEE(S): Linde Aktiengesellschaft, Germany  
 SOURCE: Eur. Pat. Appl., 5 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1180395	A2	20020220	EP 2001-119563	20010815
EP 1180395	A3	20021204		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
DE 10040209	A1	20020228	DE 2000-10040209	20000817
JP 2002126498	A2	20020508	JP 2001-241760	20010809
US 2002048541	A1	20020425	US 2001-931177	20010817

PRIORITY APPLN. INFO.: DE 2000-10040209 A 20000817  
 AB The reactor for strong exothermic and endothermic reactions is provided with spaced parallel plates which form flat channels with lateral boundary surfaces (opposite to each other). The channels alternately (1) convey a process fluid and contain a solid catalyst and (2) convey a heat-transfer medium in an indirect heat contact with the process fluid. The plates are either flat or provided with grooves and ribs. The plate surfaces facing the process fluid flow are at least partially covered with the catalyst. The catalyst layer thickness is 1-500  $\mu\text{m}$  (preferably 10-100  $\mu\text{m}$ ). The reactor is suitable for various exothermic and endothermic reactions (e.g., NH<sub>3</sub> synthesis, ethylene oxide synthesis, MeOH synthesis, synthesis of higher alcs., hydrogenation of hydrocarbons, Fischer-Tropsch synthesis, Claus reaction, oxidation of SO<sub>2</sub> to SO<sub>3</sub>, oxidation of H<sub>2</sub>S to S).

L6 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2000:335705 CAPLUS  
 DOCUMENT NUMBER: 132:336099  
 TITLE: Reactor for strongly exothermic catalytic reactions  
 INVENTOR(S): Heisel, Michael  
 PATENT ASSIGNEE(S): Linde A.-G., Germany  
 SOURCE: Ger. Offen., 6 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19851109	A1	20000518	DE 1998-19851109	19981106
EP 1002571	A1	20000524	EP 1999-122144	19991105

EP 1002571 B1 20040107  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO  
BE 1012917 A4 20010508 BE 1999-720 19991105  
ES 2210947 T3 20040701 ES 1999-122144 19991105  
US 6676906 B1 20040113 US 1999-435355 19991108

PRIORITY APPLN. INFO.: DE 1998-19851109 A 19981106  
AB The title reactor, giving greater safety in case of process upsets, has catalyst particles between cooled partition walls formed from metal plates and elements having channels for the passage of cooling liqs. A drawing of the reactor is included, and use of the reactor in hydrogenating C<sub>2</sub>H<sub>2</sub> to C<sub>2</sub>H<sub>4</sub> is exemplified.